Photograph by United States Army Air Corps

PROGRAM

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THE ILLINOIS STUDENT ENGINEERING EXHIBIT

APRIL 17, 1937

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PRESENTED BY THE COLLEGE OF ENGINEERING

UNIVERSITY OF ILLINOIS

sories for handling, charging drill holes and firing explosives. Also heat treatment of metals and welding exhibit.

CERAMICS BUILDING

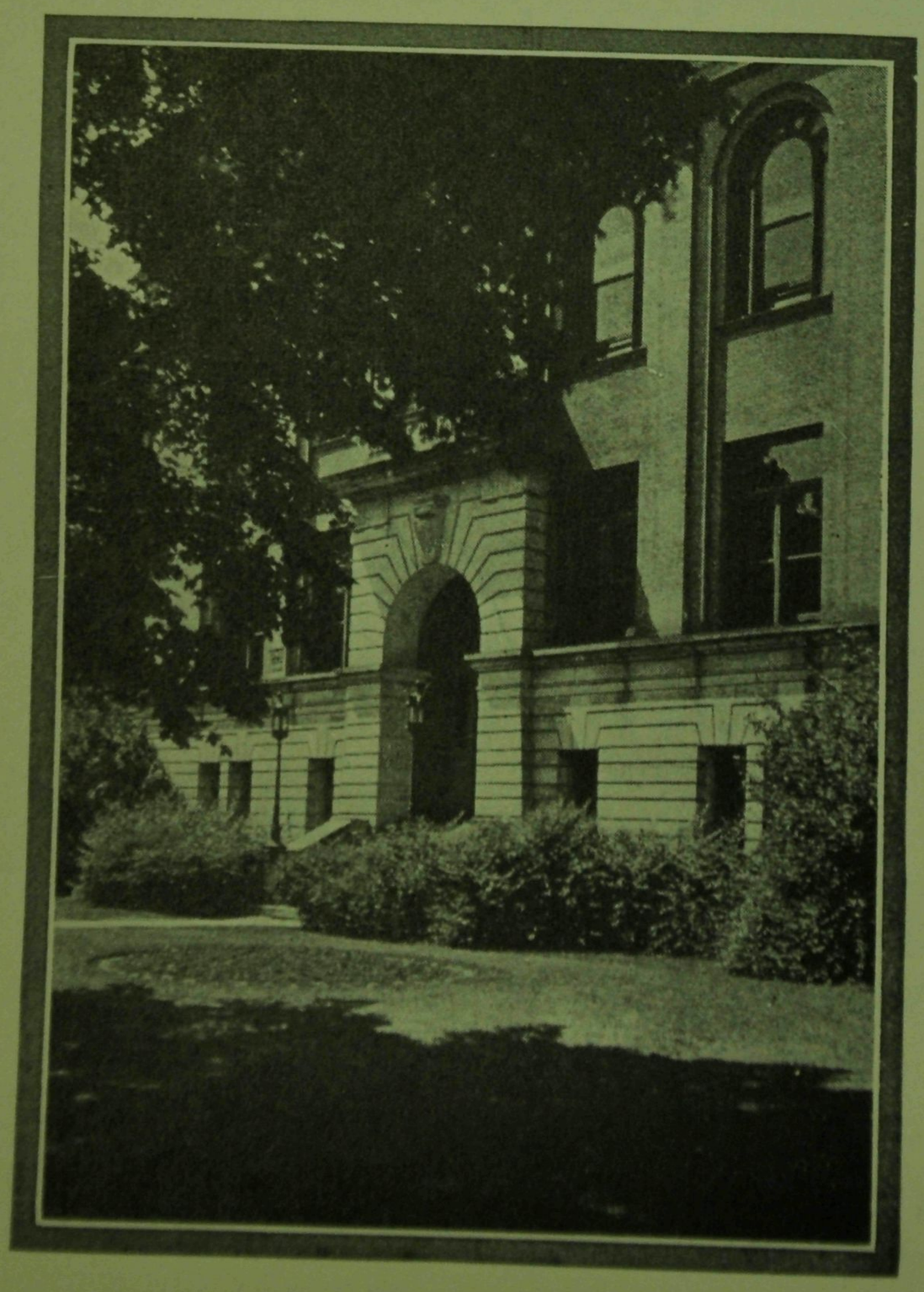
KILN LABORATORY: Jaw crusher, clay tempering, brick making, kiln and furnace operations, enamel fritting, slagging.

Movies, lecture, or demonstration in Room 218, glass research laboratories, microscopic studies of ceramic materials with a viewing device, enamel research, cast iron enameling (dry process) and sheet steel enameling (Globar furnace), museum.

Research apparatus, body preparation, tile pressing, throwing, jiggering and casting of pottery, exhibit of clay products, strength tests, thermal expansion furnaces, impact tests on porcelain, shrinkage and porosity measurements, preparation of metal for enameling, enamel exhibit, metal enameling (get an enameled U. of I. souvenir ash tray).

LOCOMOTIVE LABORATORY

An Illinois Central mogul locomotive will be in operation almost continuously throughout the day. Several times during the show the engine will be put through its paces, *i. e.*, tractive effort and fuel consumption tests will be run. Here is an opportunity to see a locomotive operate at normal speed with full load and still not move an inch. Special testing equipment used in research work is also located here.



Engineering Hall was one of the first engineering buildings to be erected on the University of Illinois campus. In this building is housed all of the College offices, and the main office of the Engineering Experiment Station. On the first and second floors may be found the Engineering Library.

Many engineering graduates carry fond memories of the hours spent in the pursuit of an education under the roof of this building. Engineering Hall serves as the center of many engineering student activities. The Illinois Technograph has its office here, and many Departmental Societies hold their meetings in its lecture rooms.

TEST CAR

The dynamometer cars are used to measure the performance of steam passenger and freight trains. The electric railway test car is a specially equipped interurban car, which may be moved under its own power, for the purpose of making tests of motor performance and rail bond condition.

BRIDGE BUILDING

T. N. T. will construct a military bridge across the Boneyard several times during the day.

TRANSPORTATION BUILDING

Sections of various types and weights of steel rails, models of locomotive valve gears and standard car couples, railway signal and automatic block models.

Display of elementary drawings, advanced drawings, architectural projections and descriptive geometry.

Display of large size models and attractively colored developments of conic and cylindrical intersections modeled and drawn to exact measurements.

Air-brush display and demonstration showing color, tone shading, rendering as applied to engineering.

Display of N.Y.A. Project No. 23 in operation. Display of completed work such as maps for "The Study of Local School Units."

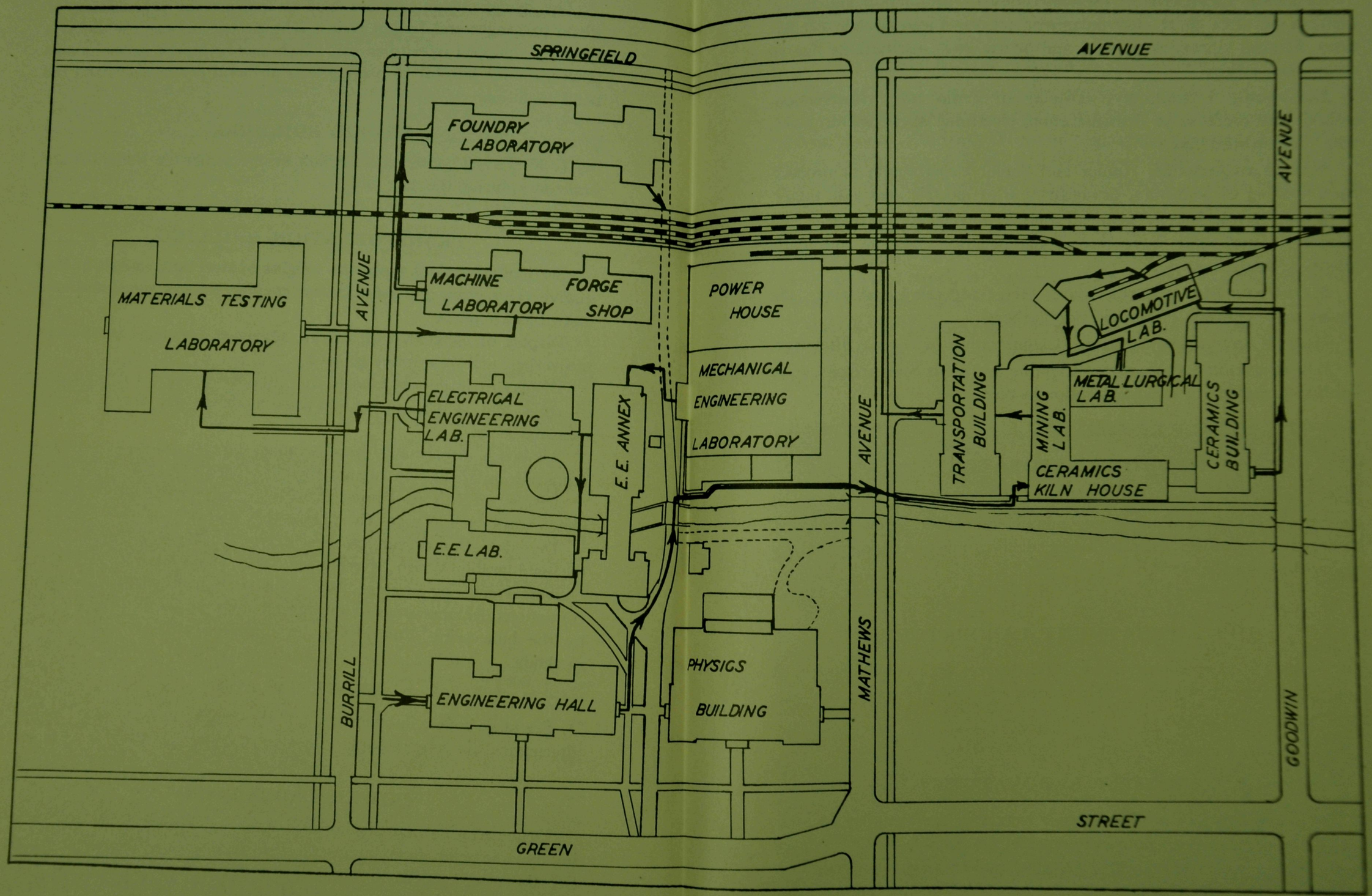
Demonstration of various types of lettering pens, irregular curves, the pantograph, Wrico lettering aids, section liners, the ellipsograph, Universal drafting machine, beam compasses, and power erasers. A continuous demonstration of the reproduction of engineering drawings by the blue print, Van Dyke, ozalid, photostatic and zinc etching methods.

POWER PLANT

See large boilers in operation, and the coal burning in them! Turbo-alternators, air compressors, pumps in operation.

POWER LABORATORY

Demonstration and display of instructional equipment: Belt testing dynamometer, fans, pumps, Corliss steam engine, Diesel oil engine. See the new, modern air-conditioning apparatus that heats or cools the air as desired.


SPRINGFIELD
AVENUE
FOUNDRY
LABORATORY
MATERIALS TESTING
LABORATORY
AVENUE
MACHINE
LABORATORY
FORGE
SHOP
POWER
HOUSE
ELECTRICAL
ENGINEERING
LAB.
E.E. ANNEX
MECHANICAL
ENGINEERING
LABORATORY
AVENUE
LOCOMOTIVE
LAB.
METAL LURGICAL
LAB.
TRANSPORTATION
BUILDING
MINING
LAB.
CERAMICS
BUILDING
CERAMICS
KILN HOUSE
E.E. LAB.
PHYSICS
BUILDING
ENGINEERING HALL
BURRILL
MATHEWS
GOODWIN
GREEN
STREET

ELECTRICAL ENGINEERING LABORATORY

RESEARCH LABORATORY: Demonstration of production and measurement of ultra short electromagnetic waves, Piezo-electric oscillations, flexural vibrations of steel and quartz rods, oscillations due to corona discharges.

ELECTRONIC LABORATORY: Display of radio tube construction, cathode ray oscilloscope demonstration, electronic speed meter, voice recording on steel tape.

MAIN LABORATORIES: Junior and Senior experiments in process. Spot welding of souvenirs, demonstration of electric cost rate meter.

RADIO LABORATORY: Demonstration of television transmitter and receiver, actual short wave voice communication. See an automatic telephone exchange.

METER AND RELAY LABORATORY: Meter and relay operations, the design and operation of electric sign flashers.

HIGH VOLTAGE LABORATORY: Demonstration of corona discharge.

ILLUMINATION LABORATORY: Lighting and sight comparisons, trick lighting presented in a demonstration-lecture.

MACHINE LABORATORY

See a gas engine so small that you can hold it in your hand while it operates at 5,000 revolutions per minute, automatic screw machines, hand screw machines, engine lathes, drilling machines (operated by engineering students).

HEAT TREATMENT LABORATORY

See tool steel quenched from 2400 degrees Fahrenheit, so hot it would burn ordinary metal. Microscopic specimens showing the various types of steels.

FOUNDRY LABORATORY

Get a souvenir Lincoln head paper weight in the Foundry Laboratory. Molten brass and aluminum melted in crucible will be poured every hour until evening. At 7:00 P.M. molten gray iron will flow from the cupola and be poured into sand molds. See patterns for gas engines, pattern design drawings made by students.

WELDING LABORATORY

See the welding of metals and the fabrication of machine parts by welding.

MATERIALS TESTING LABORATORY

One 20″ x 48″ concrete cylinder will be broken every hour on the hour in the 3,000,000 pound testing machine. One 130-pound steel rail will be broken in the 600,000 pound testing machine every hour. Wood arches will be tested in the 300,000 pound testing machine. See the machines for testing welded joints used in modern building construction.

Centrifugal pumps to furnish water for the Hydraulics Laboratory apparatus for the study of the flow of water through a glass pipe. Research apparatus for detection of fissures and cracks in steel rails. (This research work is depended upon to prevent railroad wrecks caused by broken rails.)

HYDRAULIC LABORATORY: Pumps, water motors, turbines and apparatus for the study of the measurement of flow of water; all in operation.

MATERIALS TESTING LABORATORY

Sanitation and Water Supply: Microscopic views of living water organisms, extracting water from air, model water purification plant for the city of Chicago.

Tension tests of steel and cast iron, testing machines and apparatus for measuring the physical properties of metals (in continuous operation), torsion test of cast iron, bending tests of wood and steel beams, testing machines for cloth and wire, student laboratories for study of stone, bituminous materials and soils.

Photoelastic Laboratory: See the latest developments in photoelastic research. See the research carried on materials subjected to vibrations. See the lead investigation.

Curricula Offered in the College of Engineering

THE CURRICULA of the College of Engineering are extensive and varied and permit a wide range of choice as well as an opportunity for genuine specialization, particularly, in the realm of graduate work. Cultural subjects are interwoven with the theoretical and technical subjects of the several departments. The instruction of the classroom and the practice afforded by the library, the drafting room, and the laboratory, are thoroughly correlated. Throughout the course, the students work on problems and proceed by methods similar to those arising in the experience of the practicing engineer. The curricula of the college are as follows:

1. Curriculum in Agricultural Engineering, with Options in Machinery and Power, and in Construction and Drainage.
2. Curriculum in Ceramic Engineering, with an Option in Ceramic Engineering Administration.
3. Curriculum in Ceramics (Designed especially for ceramic chemists).
4. Curriculum in Civil Engineering, with Options in Highway, Hydraulic, Sanitary, and Structural Engineering, and in City Planning.
5. Curriculum in Electrical Engineering, with Options in Electrical Power Machinery and in Communications.
6. Curriculum in Engineering Physics.
7. Curriculum in General Engineering.
8. Curriculum in Mechanical Engineering, with an Option in Petroleum Production Engineering. (Emphasis is given to Refrigeration, Aeronautics, Heating and Ventilation, and Heat Engines through technical electives in the regular curriculum).
9. Curriculum in Metallurgical Engineering.
10. Curriculum in Mining Engineering, with Options in Coal Mining, Ore Mining, Mining Geology, and Mine Administration.
11. Curriculum in Railway Civil Engineering.
12. Curriculum in Railway Electrical Engineering.
13. Curriculum in Railway Mechanical Engineering.

Students who have definitely decided to pursue a specialized field of engineering should select the proper curriculum, students who do not wish to pursue the more specialized curricula should register in General Engineering.

Dean—Melvin L. Enger, 105 Engineering Hall
Associate Dean—Harvey H. Jordan
300 Engineering Hall

FEATURE EXHIBITS

You can't afford to miss these!

1. Every hour, on the hour, a concrete cylinder will be tested to destruction in the 3,000,000 pound testing machine, the world's second largest. In the Materials Testing Laboratory main crane bay.

2. Kilns will be fired continuously in the Ceramics Building and brick making will be demonstrated and explained.

3. A full sized locomotive travelling at normal speed and yet not moving an inch may be seen throughout the day.

4. Don't miss the gas engine so small that it can be held in one hand while it is running at 5000 revolutions per minute.

5. Every hour during the morning and afternoon you will be able to see molten metal being poured and will be presented with a Lincoln head souvenir. Foundry.

6. In Engineering Hall can be found a model of Boulder Dam complete in every detail. See how this gigantic project is planned.

7. Frequent exhibits of direct current high voltage corona discharges may be witnessed in the Electrical Engineering Annex.

8. A model showing how soils are eroded by running water will be operated continuously. On the second floor of the Materials Testing Laboratory.

9. Television transmission and reception may be witnessed during the period of the exhibit on the second floor south of the Electrical Engineering Laboratory.

10. In the Mechanical Engineering Laboratory be sure to see the air conditioning apparatus in operation.

11. Be sure to see the steel being quenched in the Heat Treatment Laboratory.

Outstanding features where you may pause and rest

1. Continuous showing of sound motion pictures of "Three Women," a Hollywood production in technicolor, "The Hottest Flame in the World," "The Electric Ship" in room 205 Engineering Hall.

2. Every half hour you may find a seat to listen to an interesting lecture and demonstration on "Liquid Air" in Engineering Hall.

3. Movies, lectures and demonstrations in Room 218 Ceramics building of glass research and microscopic studies of ceramic materials.

I.S.E.E. HEADQUARTERS · · 108 ENGINEERING HALL

For information, guides, lost and found, bureau of missing persons, etc., inquire in this room. Also see I. S. E. E. officials at any part of the show.